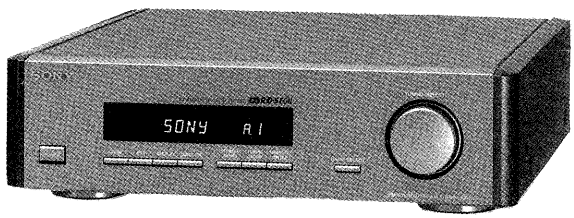
ST-S1

SERVICE MANUAL

AEP Model
UK Model
Singapore Model
Tourist Model



This set is the tuner section in SHC-S1/S2.

SPECIFICATIONS

FM tuner

Frequency range
87.5 - 108 MHz
Aerial terminals
75 unbalanced
Intermediate frequency
10.7 MHz
Sensitivity
(mono 26 dB quieting)
12.1 dBf, 1.1 µV
(stereo 46 dB quieting)
40.0 dBf, 27 µV
Usable sensitivity (IHF)
19.5 dBf, 2.6 µV
Signal-to-noise ratio (at 40 kHz deviation)
74 dB (mono)
69 dB (stereo)
Harmonic distortion
0.3% (mono); 0.5% (stereo) (at 1 kHz)
Frequency response
30 Hz - 15 kHz (+0.5 dB, -1.0 dB)
Separation
40 dB (at 1 kHz)
Selectivity
Singapore, Tourist model :
65 dB (at 400 kHz)
Other models :
80 dB (at 400 kHz)
60 dB (at 300 kHz)
Output
600mV (at 40 kHz deviation)

AM tuner

Frequency range
German model :
AM : 531 to 1,602 kHz
Italian model :
AM : 522 to 1,611 kHz
Singapore, Tourist model :
AM : 531 to 1,602 kHz
(at 9 kHz interval)
AM : 530 to 1,710 kHz
(at 10 kHz interval)
Other models :
MW : 531 to 1,602 kHz
LW : 153 to 279 kHz
Intermediate frequency
450 kHz
Intermediate frequency
450 kHz
Usable sensitivity (with AM loop aerial)
MW: 300µV/m (999 kHz)
LW: 1 mV/m (216 kHz)
Signal-to-noise ratio
54 dB (50 mV/m, 999 kHz)
50 dB (50 mV/m, 216 kHz)
Harmonic distortion
0.5% (50 mV/m, 400 Hz)
Selectivity
32 dB

General

System
PLL quartz-locked digital synthesizer system
Power requirements
AEP, German, Italian, UK model :
220 - 230 V AC, 50/60 Hz
Singapore, Tourist model :
110 - 120 V, 220 - 240 V AC, adjustable, 50/60 Hz
Power consumption
10 W
Dimensions (including projections)
Approx. 310×90×350 mm (12 1/4×3 5/8×13 7/8 inches) (w/h/d)
Mass
Approx. 2.9 kg (6 lb 6 oz)

Supplied accessories
Audio cord (1)
FM wire aerial (1)
AM loop aerial (1)

Design and specifications are subject to change without notice.

FM STEREO/FM-AM TUNER

SONY®

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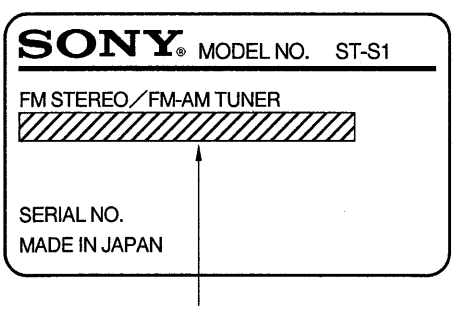
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MODEL IDENTIFICATION

— Model Number Portion —

Printed on rear cabinet



AEP, UK, German, Italian model : AC: 220—230V~50/60Hz 10W

Sigapore, Tourist model : AC:110—120/220—240V~50/60Hz 10W

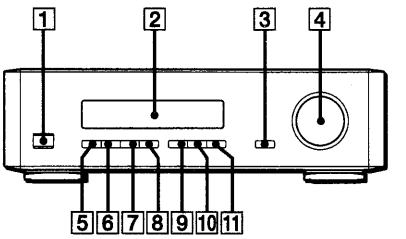
SECTION 1
GENERAL

This section is extracted from instruction manual.

Index to Parts and Controls

Front Panel

Refer to the pages indicated in parenthesis for details.



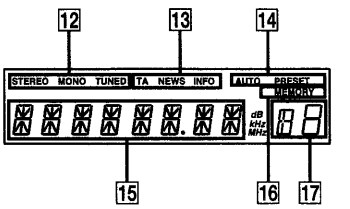
1 POWER switch (6)
2 Display window
3 BAND SELECT button (6)
4 TUNING/SELECT control (6)(7)(8)(10)
5 EON button (10)
6 PTY button (10)
7 DISPLAY button (7)(9)
8 CHARACTER button (7)
9 STEREO/MONO button (6)(7)
10 TUNING MODE button (6)(7)(8)
11 MEMORY/ENTER button (7)(10)

} Except Singapore, Tourist model

5 DISPLAY button (7)
6 CHARACTER button (7)
7 STEREO/MONO button (6)(7)
8 TUNING MODE button (6)(7)(8)
9 MEMORY button (7)
10 SHIFT button (7)(8)
11 ENTER button (7)

} Singapore, Tourist model

Display window



12 Receiving status indicator
13 RDS receiving indicator(Except Singapore, Tourist model)
14 Tuning mode indication
15 Frequency/station name indication
16 MEMORY indicator
17 Preset number indication

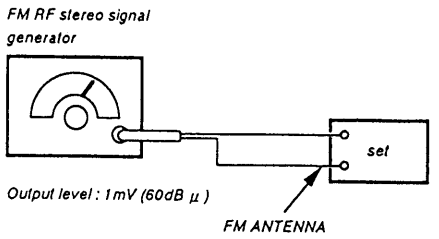
SECTION 2
ELECTRICAL ADJUSTMENTS

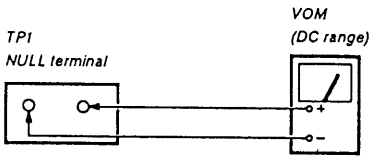
FM SECTION

SSG	Carrier frequency	98MHz
	Modulation	MONO: 1kHz, 75kHz deviation
		STEREO : Audio 1kHz, 16.25kHz deviation Pilot 19kHz, 7.5kHz deviation Sub-carrier 38kHz, 16.25kHz deviation

• FM Discriminator Alignment (NULL check)

Setting :





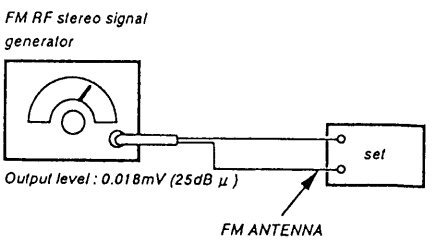
Procedur :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM

Note : FM tuned level adjustment should be made after FM discriminator alignment.

• FM Tuned Level Adjustment

Setting :

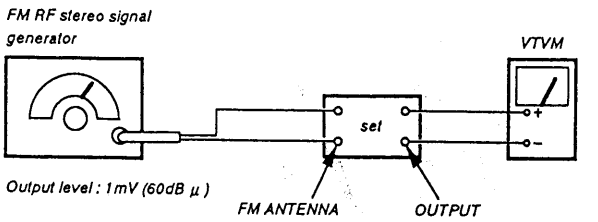


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the TUNED LED goes on.

• FM Stereo Separation Adjustment

Setting :



Procedure :

Tune the set to 98MHz

FM stereo Signal generator Output	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading

L-CH Stereo separation : Ⓐ − Ⓑ
R-CH Stereo separation : Ⓒ − Ⓓ

The separations of both channels should be equal.

AM SECTION

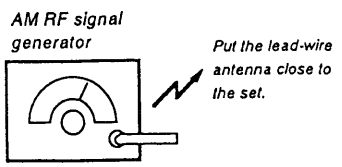
• AM Tuned Level Adjustment

( ): Italian, German, Singapore, Tourist model

Setting :

BAND selector : LW (AM)

Procedure :



30%amplitude modulation by 400Hz signal

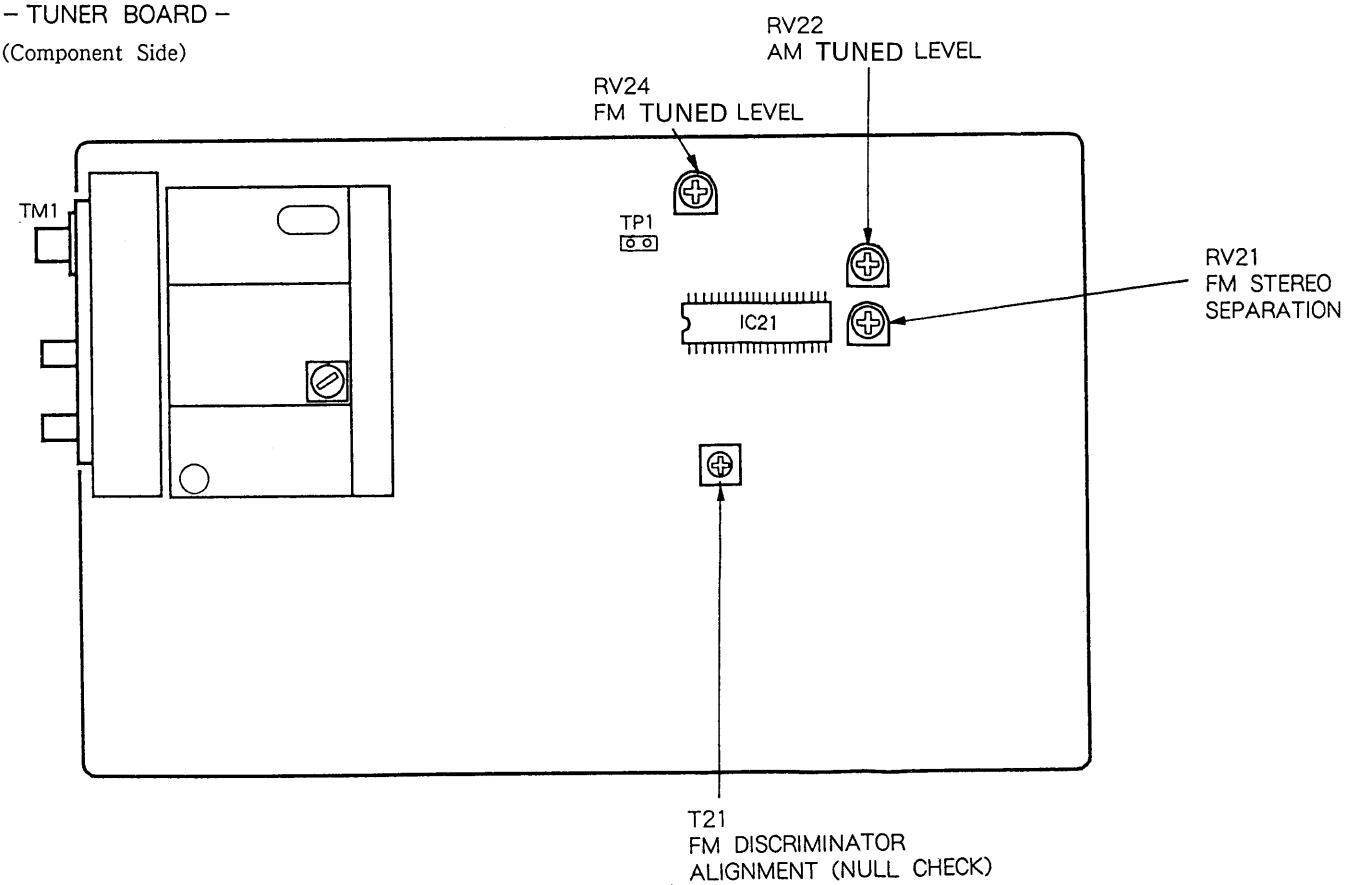
Output level: 94dBμ (50mV)

1. Tune the set to 216kHz (999kHz).
2. Adjust the RV22 so that the TUNED LED gones on.

Adjustment Location

– TUNER BOARD –

(Component Side)



SECTION 3
DIAGRAMS

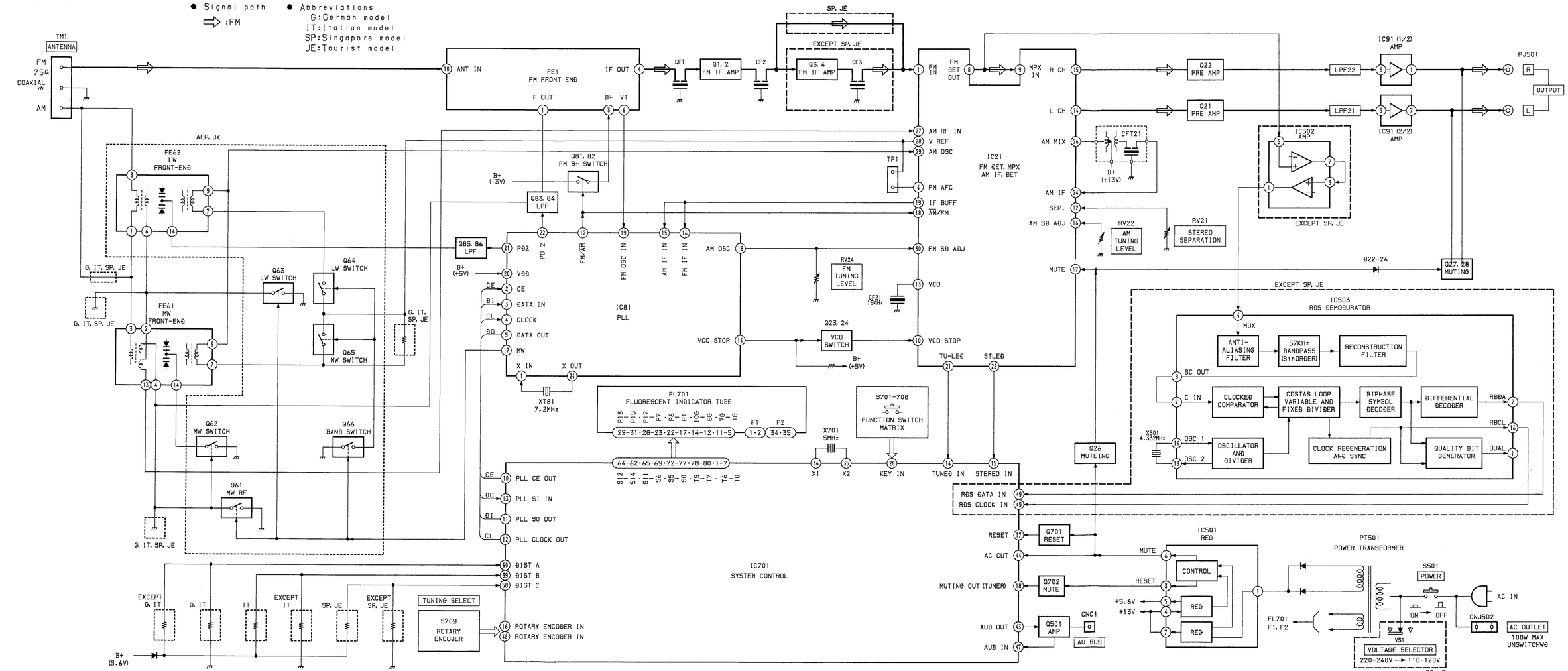
3-1. IC PIN DESCRIPTION

●IC701 μPD78044GF-118-3B9

Pin No.	Pin Name	I/O	Description
1 I 7	T6 I T0	O	FL grid output
8	VDD	—	+5V power supply
9	—	I	Not used (GND)
10	PLL CE OUT	O	LC7218 chip enable output
11	PLL SO OUT	O	Serial data output for LC7218
12	PLL CLOCK OUT	O	Serial clock output for LC7218
13	PLL SI IN	I	Serial data input from LC7218
14	TUNED IN	I	Tuning signal input (When there is an electric field)
15	STREO IN	I	STEREO input (When receiving pilot stereo broadcasting, L)
16	ROTARY ENCODER IN	I	Rotary encoder input
17	RESET	—	Reset terminal
18	MUTING OUT (TUNER)	O	Muting output (Mute:H)
19	—	O	Not used (Open)
20	A/D GND	—	A/D conveter GND terminal
21 22 23	VOLUME UP OUT VOLUME DOWN OUT VOLUME LED OUT	O	Not used (Open)
24 I 26	—	I	Not used (GND)
27	SIG IN	I	Not used (GND)
28	KEY IN	I	Key input (A/D convert)
29	A/D +15V	—	A/D converter +5V power supply
30	A/D REF +15V	—	A/D converter reference terminal
31	—	I	Not used (GND)
32	—	—	Not used (Open)
33	GND	—	Ground terminal
34 35	X1 X2	— —	System clock (5MHz) connect terminal
36 37	— —	I I	Not used (GND)
38 39 40	FUNC CONT OUT	O	Not used (Open)
41 42	STNC CONT OUT RELAY OUT	O O	Not used (Open)
43	AUB OUT	O	AUBUS outupt
44	AC CUT	I	Power off detect (OFF → L)
45	RDS CLOCK IN	I	Serial clock input from SAA6579T

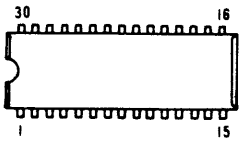
<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>46</td><td>ROTARY
ENCODER IN</td><td>I</td><td>Rotary encoder input</td></tr>
<tr><td>47</td><td>AUB IN</td><td>I</td><td>AUBUS input</td></tr>
<tr><td>48</td><td>(GND)</td><td>—</td><td>(Ground)</td></tr>
<tr><td>49</td><td>RDS DATA IN</td><td>I</td><td>Serial data input from SAA6579T</td></tr>
<tr><td>50</td><td>STEREO IN
(POLAR)</td><td>I</td><td>STEREO input (When receiving polar stereo broadcasting, L)</td></tr>
<tr><td>51</td><td>MONO OUT
(POLAR)</td><td>O</td><td>Reception and input of polar monaural broadcasting</td></tr>
<tr><td>52</td><td>VDD</td><td>—</td><td>+5V power supply</td></tr>
<tr><td>53
54
55
56
57</td><td>SIRCS IN
—
—
—
ST/STR</td><td>I
I
I
I
I</td><td>Not used (GND)</td></tr>
<tr><td>58
59
60</td><td>DIST C
DIST B
DIST A</td><td>I
I
I</td><td>
<table>
<tr><th></th><th>AEP,UK</th><th>German</th><th>Italisn</th><th>Singapore,Tourist</th></tr>
<tr><td>DIST C</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>DIST B</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>DIST A</td><td>H</td><td>L</td><td>L</td><td>H</td></tr>
</table>
</td></tr>
<tr><td>61</td><td>—</td><td>O</td><td>Not used (Open)</td></tr>
<tr><td>62
|
70</td><td>S14
|
S6</td><td>O</td><td>FL segment output</td></tr>
<tr><td>71</td><td>-29V</td><td>—</td><td>FL drive power supply (-29V)</td></tr>
<tr><td>72
|
77</td><td>S5
|
S0</td><td>O</td><td>FL segment output</td></tr>
<tr><td>78
|
80</td><td>T9
|
T7</td><td>O</td><td>FL segment output</td></tr>
</table>

3-2. BLOCK DIAGRAM



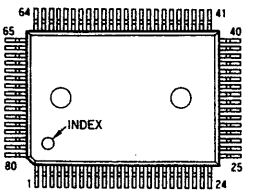
• **Semiconductor Lead Layouts**

LA1851N



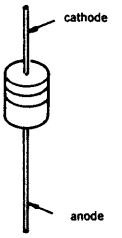
(Top view)

μPD78044GF-118-3B9

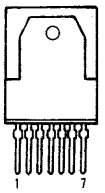


(TOP VIEW)

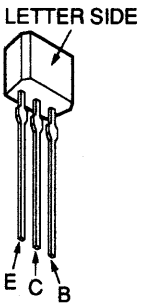
11ES2
HZS30-2L
HZS7C2L



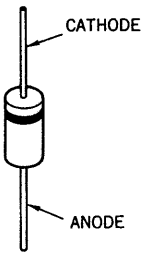
LA5667



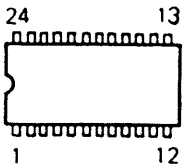
2SA1175-HFE
2SC2785-HFE



1N4148M

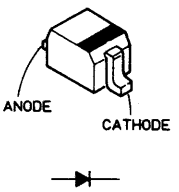


LC7218-ST

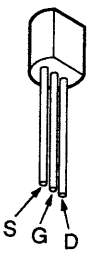


(Top view)

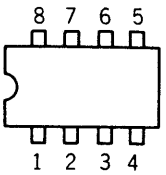
1SS352



2SK246-GR3



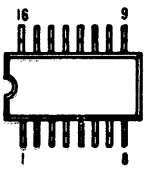
NJM4580D



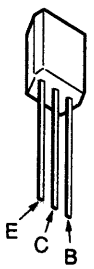
(Top view)

2SC1603-EF
2SC2603-EF
2SC2669-OY
2SC3113-AB
DTA-114ES
DTC-114ES

SAA6579T



(TOP VIEW)



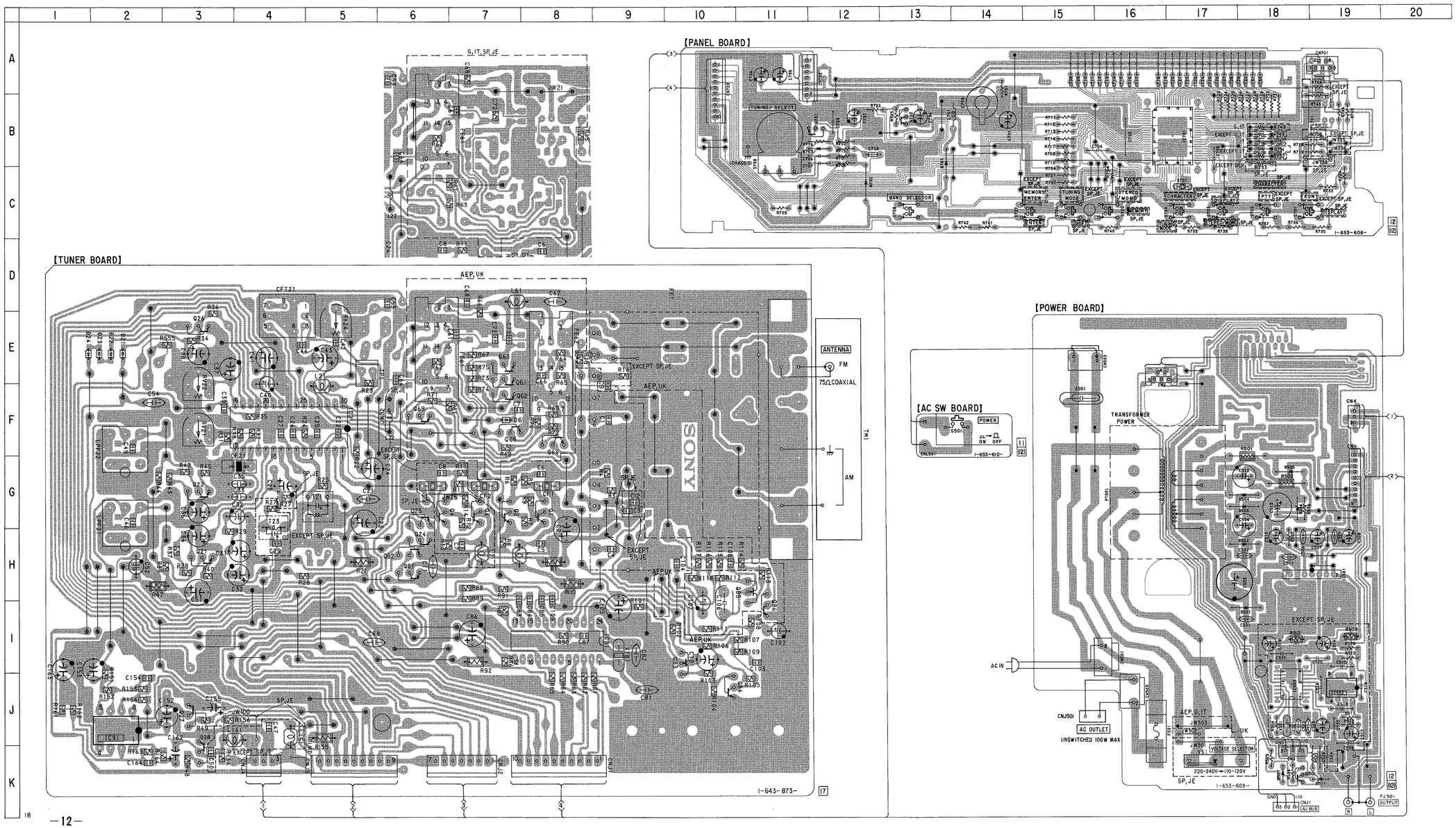
3-3. PRINTED WIRING BOARDS

• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D21	E-2	Q1	G-8
D22	E-2	Q2	G-7
D23	E-2	Q3	G-7
D24	E-1	Q4	G-6
D61	F-7	Q21	H-3
D501	H-17	Q22	G-3
D502	H-18	Q23	H-6
D503	G-18	Q24	H-6
D504	G-18	Q26	E-3
D505	G-18	Q27	J-3
D506	G-18	Q28	J-3
D507	K-18	Q61	F-7
D511	K-19	Q62	F-7
D701	B-13	Q63	E-7
D702	C-12	Q64	F-8
D703	B-12	Q65	F-6
		Q66	F-7
IC21	F-4	Q81	H-6
IC81	I-8	Q82	H-6
IC91	J-2	Q83	I-10
IC501	H-18	Q84	J-10
IC502	J-19	Q85	H-11
IC503	J-18	Q86	H-11
IC701	B-17	Q501	K-18
		Q701	B-12
		Q702	B-13

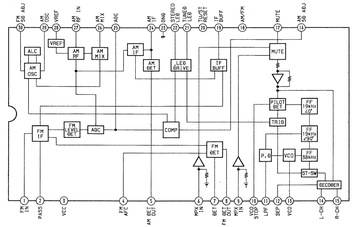
Note

• ○—— : parts extracted from the component side.
• ▨ : Pattern on the side which is seen.
• **Abbreviations**
G : German
IT : Italian
SP : Singapore
JE : Tourist

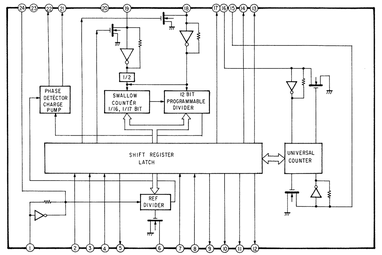


● IC Block Diagrams

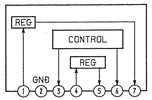
IC21 LA1851N



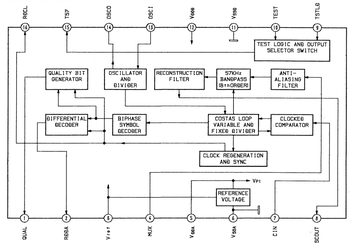
IC81 LC7218



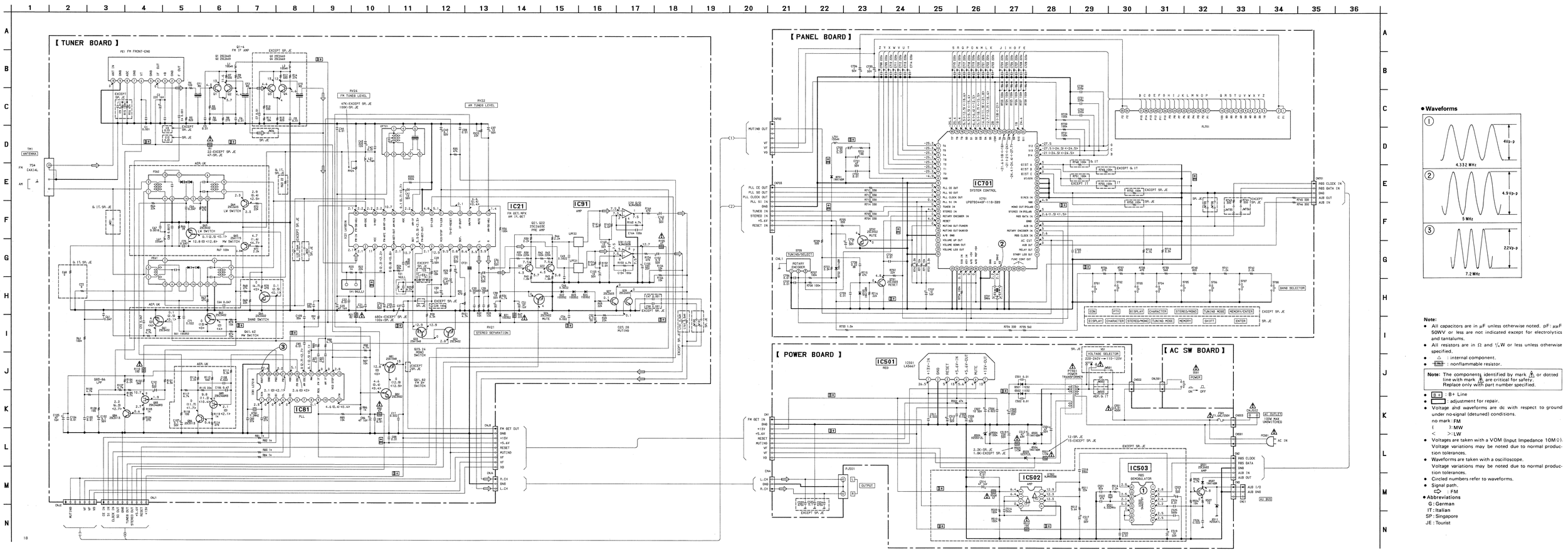
IC501 LA5667



IC503 SAA6579



3-4. SCHEMTIC DIAGRAM



● Waveforms

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ⚠ : nonflammable resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ): MW
  < >: LW
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ⇦ : AM

● Abbreviations
G : German
IT : Italian
SP : Singapore
JE : Tourist

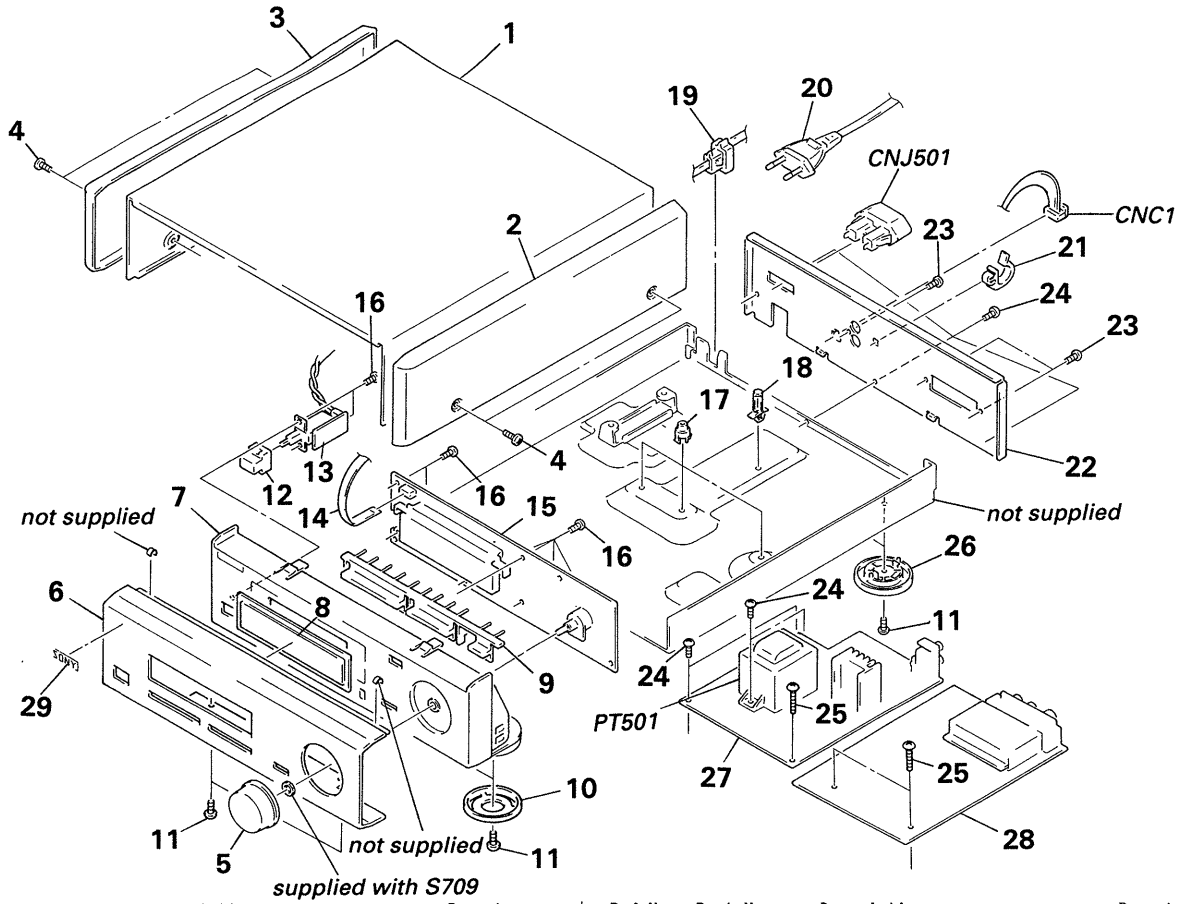
SECTION 4
EXPLODED VIEW

NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Abbreviations
  G : German SP : Singapore
  IT : Italian JE : Tourist



Ref. No.	Part No.	Description	Remark
1	4-967-150-31	CASE	
2	X-4945-477-1	PANEL (R) ASSY, SIDE	
3	X-4945-476-1	PANEL (L) ASSY, SIDE	
4	4-969-954-01	SCREW (SIDE PANEL)	
5	4-968-115-01	KNOB (DIA. 42)	
6	4-968-111-11	PANEL (ST), FRONT (AEP, G, IT, UK)	
6	4-968-111-21	PANEL (ST), FRONT (SP, JE)	
7	4-968-112-02	BASE (ST), PANEL	
8	4-968-114-01	WINDOW	
9	4-968-113-02	BUTTON (AE)	
10	X-4945-079-1	RING ASSY, FOOT	
11	3-704-515-21	SCREW (BV/RING)	
12	4-968-098-01	BUTTON (P)	
* 13	1-653-610-11	AC SW BOARD	
14	1-751-023-11	WIRE (FLAT TYPE) (5 CORE)	
* 15	A-4371-647-A	PANEL BOARD, COMPLETE (AEP, UK)	
* 15	A-4371-650-A	PANEL BOARD, COMPLETE (G)	
* 15	A-4371-651-A	PANEL BOARD, COMPLETE (IT)	
* 15	A-4377-193-A	PANEL BOARD, COMPLETE (SP, JE)	
16	4-951-620-01	SCREW (2.6X8), +BVTP	
* 17	4-968-100-01	SUPPORT, PC	
* 18	3-349-025-31	HOLDER, PC BOARD	

Ref. No.	Part No.	Description	Remark
* 19	3-703-244-00	BUSHING (2104), CORD	
⚠20	1-575-651-21	CORD, POWER (EXCEPT UK)	
⚠20	1-769-639-11	CORD, POWER (UK)	
* 21	4-949-235-01	HOOK	
* 22	4-968-117-11	PANEL, BACK (AEP, G, IT)	
* 22	4-968-117-21	PANEL, BACK (SP, JE)	
* 22	4-968-117-31	PANEL, BACK (UK)	
23	3-704-515-41	SCREW (BV/RING)	
24	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
25	7-685-650-79	SCREW +BVTP 3X16 TYPE2	
26	X-4945-129-1	FOOT ASSY	
* 27	A-4371-646-A	POWER BOARD, COMPLETE (AEP, UK)	
* 27	A-4371-649-A	POWER BOARD, COMPLETE (G, IT)	
* 27	A-4377-192-A	POWER BOARD, COMPLETE (SP, JE)	
* 28	A-4371-645-A	TUNER BOARD, COMPLETE (AEP, UK)	
* 28	A-4371-648-A	TUNER BOARD, COMPLETE (G, IT)	
* 28	A-4377-194-A	TUNER BOARD, COMPLETE (SP, JE)	
29	4-969-961-11	EMBLEM (NO. 4), SONY	
CNC1	1-769-096-11	CORD (WITH CONNECTOR)	
⚠CNJ501	1-526-794-11	OUTLET, AC	
⚠PT501	1-423-525-11	TRANSFORMER, POWER (AEP, G, IT, UK)	
⚠PT501	1-423-526-11	TRANSFORMER, POWER (SP, JE)	

SECTION 5
ELECTRICAL PARTS LIST

AC SW **PANEL**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviations
  G:German
  IT:Italian
  SP:Singapore
  JE:Tourist

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-653-610-11	AC SW BOARD			
		**********			
		< CONNECTOR >			
CNL501	1-690-122-31	REED (WITH CONNECTOR) (2 CORE)			
		< SWITCH >			
⚠S501	1-762-168-11	SWITCH, AC POWER PUSH (1 KEY) (POWER)			
**********					
*	A-4371-647-A	PANEL BOARD, COMPLETE (AEP, UK)			
*	A-4371-650-A	PANEL BOARD, COMPLETE (G)			
*	A-4371-651-A	PANEL BOARD, COMPLETE (IT)			
*	A-4377-193-A	PANEL BOARD, COMPLETE (SP, JE)			
		**********			
*	4-942-301-51	HOLDER, FL TUBE			
*	4-945-305-01	CUSHION (FL TUBE)			
		< CAPACITOR >			
C701	1-124-910-11	ELECT	47uF	20%	50V
C702	1-162-306-11	CERAMIC	0.01uF	30%	16V
C703	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V
C704	1-162-306-11	CERAMIC	0.01uF	30%	16V
C705	1-162-306-11	CERAMIC	0.01uF	30%	16V
C706	1-162-306-11	CERAMIC	0.01uF	30%	16V
C707	1-162-306-11	CERAMIC	0.01uF	30%	16V
C708	1-162-286-31	CERAMIC	220PF	10%	50V
C709	1-162-286-31	CERAMIC	220PF	10%	50V
C710	1-162-286-31	CERAMIC	220PF	10%	50V
C711	1-162-286-31	CERAMIC	220PF	10%	50V
C712	1-162-286-31	CERAMIC	220PF	10%	50V
C713	1-162-286-31	CERAMIC	220PF	10%	50V
C714	1-162-286-31	CERAMIC	220PF	10%	50V
C715	1-162-286-31	CERAMIC	220PF	10%	50V
C716	1-162-286-31	CERAMIC	220PF	10%	50V
C717	1-162-286-31	CERAMIC	220PF	10%	50V
C718	1-162-286-31	CERAMIC	220PF	10%	50V
C719	1-162-286-31	CERAMIC	220PF	10%	50V
C720	1-162-286-31	CERAMIC	220PF	10%	50V
C721	1-162-286-31	CERAMIC	220PF	10%	50V
C722	1-162-286-31	CERAMIC	220PF	10%	50V
C723	1-162-286-31	CERAMIC	220PF	10%	50V
C724	1-162-286-31	CERAMIC	220PF	10%	50V
C725	1-162-286-31	CERAMIC	220PF	10%	50V
C726	1-162-286-31	CERAMIC	220PF	10%	50V
C727	1-162-286-31	CERAMIC	220PF	10%	50V
C728	1-162-286-31	CERAMIC	220PF	10%	50V
C729	1-162-286-31	CERAMIC	220PF	10%	50V
C730	1-162-286-31	CERAMIC	220PF	10%	50V
C731	1-162-286-31	CERAMIC	220PF	10%	50V
C732	1-162-286-31	CERAMIC	220PF	10%	50V
C734	1-124-927-11	ELECT	4.7uF	20%	100V
C735	1-126-301-11	ELECT	1uF	20%	50V
C736	1-126-301-11	ELECT	1uF	20%	50V
C737	1-126-157-11	ELECT	10uF	20%	16V
C738	1-136-169-00	FILM	0.22uF	5%	50V
C739	1-162-306-11	CERAMIC	0.01uF	30%	16V
		< CONNECTOR >			
* CN701	1-568-824-11	SOCKET, CONNECTOR 5P			
* CN702	1-568-934-11	PIN, CONNECTOR 7P			
* CN703	1-568-937-11	PIN, CONNECTOR 10P			
* CNL1	1-690-880-31	LEAD (WITH CONNECTOR)			
		< DIODE >			
D701	8-719-987-63	DIODE 1N4148M			
D702	8-719-987-63	DIODE 1N4148M			
D703	8-719-987-63	DIODE 1N4148M			
		< FLUORESCENT INDICATOR TUBE >			
FL701	1-517-141-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	8-759-326-87	IC uPD78044GF-118-3B9			
		< COIL >			
L701	1-410-521-11	INDUCTOR	100uH		

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q701	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q702	8-729-900-80	TRANSISTOR	DTC114ES		
		< RESISTOR >			
R701	1-247-807-31	CARBON	100	5%	1/4W
R702	1-249-433-11	CARBON	22K	5%	1/4W
R703	1-249-411-11	CARBON	330	5%	1/4W
R704	1-249-411-11	CARBON	330	5%	1/4W
R705	1-249-411-11	CARBON	330	5%	1/4W
R707	1-249-441-11	CARBON	100K	5%	1/4W
R708	1-249-441-11	CARBON	100K	5%	1/4W
R709	1-249-411-11	CARBON	330	5%	1/4W
R710	1-249-429-11	CARBON	10K	5%	1/4W
R711	1-249-411-11	CARBON	330	5%	1/4W
R712	1-249-411-11	CARBON	330	5%	1/4W
R713	1-249-411-11	CARBON	330	5%	1/4W
R714	1-249-411-11	CARBON	330	5%	1/4W
R715	1-249-437-11	CARBON	47K	5%	1/4W
R716	1-249-433-11	CARBON	22K	5%	1/4W
R717	1-249-429-11	CARBON	10K	5%	1/4W
R718	1-249-425-11	CARBON	4.7K	5%	1/4W
R719	1-249-423-11	CARBON	3.3K	5%	1/4W
R721	1-249-423-11	CARBON	3.3K	5%	1/4W
R722	1-249-423-11	CARBON	3.3K	5%	1/4W
R723	1-249-441-11	CARBON	100K	5%	1/4W
R724	1-249-441-11	CARBON	100K	5%	1/4W
R725	1-249-441-11	CARBON	100K	5%	1/4W
R726	1-249-441-11	CARBON	100K	5%	1/4W
R727	1-249-441-11	CARBON	100K	5%	1/4W
R728	1-249-441-11	CARBON	100K	5%	1/4W
R729	1-249-441-11	CARBON	100K	5%	1/4W
R730	1-249-441-11	CARBON	100K	5%	1/4W
R731	1-249-441-11	CARBON	100K	5%	1/4W
R733	1-249-419-11	CARBON	1.5K	5%	1/4W
R734	1-249-411-11	CARBON	330	5%	1/4W
R735	1-249-414-11	CARBON	560	5%	1/4W
R736	1-249-410-11	CARBON	270	5%	1/4W
R737	1-249-411-11	CARBON	330	5%	1/4W
R738	1-249-413-11	CARBON	470	5%	1/4W
R739	1-249-414-11	CARBON	560	5%	1/4W
R740	1-249-416-11	CARBON	820	5%	1/4W
R741	1-249-418-11	CARBON	1.2K	5%	1/4W
R742	1-249-421-11	CARBON	2.2K	5%	1/4W
R743	1-249-411-11	CARBON	330	5%	1/4W (EXCEPT SP, JE)
R744	1-249-411-11	CARBON	330	5%	1/4W (EXCEPT SP, JE)
R745	1-249-411-11	CARBON	330	5%	1/4W
R746	1-249-411-11	CARBON	330	5%	1/4W
R747	1-249-423-11	CARBON	3.3K	5%	1/4W
R748	1-249-441-11	CARBON	100K	5%	1/4W (G, IT)
R749	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT G, IT)
R750	1-249-441-11	CARBON	100K	5%	1/4W (IT)
R751	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT IT)
R752	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT SP, JE)
R753	1-249-441-11	CARBON	100K	5%	1/4W (SP, JE)
R754	1-249-441-11	CARBON	100K	5%	1/4W
		< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (EON) (EXCEPT SP, JE)			
S701	1-554-303-21	SWITCH, TACTILE (DISPLAY) (SP, JE)			
S702	1-554-303-21	SWITCH, TACTILE (PTY) (EXCEPT SP, JE)			
S702	1-554-303-21	SWITCH, TACTILE (CHARACTER) (SP, JE)			
S703	1-554-303-21	SWITCH, TACTILE (DISPLAY) (EXCEPT SP, JE)			
S703	1-554-303-21	SWITCH, TACTILE (STEREO/MONO) (SP, JE)			
S704	1-554-303-21	SWITCH, TACTILE (CHARACTER) (EXCEPT SP, JE)			
S704	1-554-303-21	SWITCH, TACTILE (TUNING MODE) (SP, JE)			
S705	1-554-303-21	SWITCH, TACTILE (STEREO/MONO) (EXCEPT SP, JE)			
S705	1-554-303-21	SWITCH, TACTILE (MEMORY) (SP, JE)			
S706	1-554-303-21	SWITCH, TACTILE (TUNING MODE) (EXCEPT SP, JE)			
S706	1-554-303-21	SWITCH, TACTILE (SHIFT) (SP, JE)			
S707	1-554-303-21	SWITCH, TACTILE (MEMORY/ENTER) (EXCEPT SP, JE)			
S707	1-554-303-21	SWITCH, TACTILE (ENTER) (SP, JE)			
S708	1-554-303-21	SWITCH, TACTILE (BAND SELECTOR)			
S709	1-466-513-22	ENCODER, ROTARY (TUNING/SELECT)			
		< VIBRATOR >			
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
**********					
*	A-4371-646-A	POWER BOARD, COMPLETE (AEP, UK)			
*	A-4371-649-A	POWER BOARD, COMPLETE (G, IT)			
*	A-4377-192-A	POWER BOARD, COMPLETE (SP, JE)			
		**********			
*	1-533-213-31	HOLDER, FUSE			
*	4-911-383-01	HEAT SINK			
	7-682-548-09	SCREW +B 3X8			
		< CAPACITOR >			
C501	1-101-004-00	CERAMIC	0.01uF		50V
C502	1-101-004-00	CERAMIC	0.01uF		50V
C503	1-126-105-11	ELECT	1000uF	20%	35V
C504	1-124-910-11	ELECT	47uF	20%	50V
C506	1-101-005-00	CERAMIC	0.022UF		50V

POWER TUNER

Ref. No.	Part No.	Description	Remark
C507	1-124-907-11	ELECT 10uF 20% 50V	
C508	1-124-907-11	ELECT 10uF 20% 50V	
C509	1-101-005-00	CERAMIC 0.022UF 50V	
C510	1-124-925-11	ELECT 2.2uF 20% 100V	
C511	1-101-005-00	CERAMIC 0.022UF 50V	
C512	1-124-918-11	ELECT 47uF 20% 63V	
C513	1-124-911-11	ELECT 220uF 20% 50V	
C514	1-124-477-11	ELECT 47uF 20% 25V	(EXCEPT SP, JE)
C515	1-162-306-11	CERAMIC 0.01uF 30% 16V	(EXCEPT SP, JE)
C516	1-162-291-31	CERAMIC 560PF 10% 50V	(EXCEPT SP, JE)
C517	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT SP, JE)
C518	1-162-288-31	CERAMIC 330PF 10% 50V	(EXCEPT SP, JE)
C519	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT SP, JE)
C520	1-162-306-11	CERAMIC 0.01uF 30% 16V	(EXCEPT SP, JE)
C521	1-102-527-11	CERAMIC 82PF 5% 50V	(EXCEPT SP, JE)
C522	1-101-880-00	CERAMIC 47PF 5% 50V	(EXCEPT SP, JE)
C523	1-124-925-11	ELECT 2.2uF 20% 100V	(EXCEPT SP, JE)
C524	1-162-306-11	CERAMIC 0.01uF 30% 16V	(EXCEPT SP, JE)
C525	1-162-291-31	CERAMIC 560PF 10% 50V	(EXCEPT SP, JE)
C526	1-161-494-00	CERAMIC 0.022uF 25V	
C533	1-162-290-31	CERAMIC 470PF 10% 50V	(EXCEPT SP, JE)
C534	1-162-290-31	CERAMIC 470PF 10% 50V	(EXCEPT SP, JE)
C535	1-164-159-11	CERAMIC 0.1uF 50V	(EXCEPT SP, JE)
⚠C551	1-161-744-51	CERAMIC 0.01uF 400V	
		< CONNECTOR >	
* CN2	1-568-824-11	SOCKET, CONNECTOR 5P	
CN3	1-764-326-11	PIN, CONNECTOR (PCB) (V TYPE) 3P	
CN501	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
CN502	1-564-321-00	PIN, CONNECTOR 2P	
CN503	1-564-321-00	PIN, CONNECTOR 2P	
		< DIODE >	
D501	8-719-200-82	DIODE 11ES2	
D502	8-719-200-82	DIODE 11ES2	
D503	8-719-987-63	DIODE 1N4148M	
D504	8-719-987-63	DIODE 1N4148M	
D505	8-719-933-50	DIODE HZS7C2L	
D506	8-719-934-22	DIODE HZS30-2L	
D507	8-719-987-63	DIODE 1N4148M	
D511	8-719-933-33	DIODE HZS6A1L	
		< FUSE >	
⚠F501	1-532-259-00	FUSE, TIME-LAG T1.6AL/250V	
		< IC >	
IC501	8-759-820-09	IC LA5667	
IC502	8-759-634-51	IC M5218AP	(EXCEPT SP, JE)
IC503	8-759-065-98	IC SAA6579T	(EXCEPT SP, JE)
		< JACK >	
PJ501	1-565-352-11	JACK, PIN 2P (OUTPUT)	
		< TRANSFORMER >	
⚠PT501	1-423-525-11	TRANSFORMER, POWER	(EXCEPT SP, JE)
⚠PT501	1-423-526-11	TRANSFORMER, POWER	(SP, JE)
		< TRANSISTOR >	
Q501	8-729-620-05	TRANSISTOR 2SC2603-EF	
		< RESISTOR >	
⚠R501	1-247-729-11	CARBON 15 5% 1/2W F	(EXCEPT SP, JE)
⚠R501	1-247-728-11	CARBON 12 5% 1/2W F	(SP, JE)
R502	1-249-437-11	CARBON 47K 5% 1/4W	
⚠R503	1-247-755-81	CARBON 1.8K 5% 1/2W F	(EXCEPT SP, JE)
⚠R503	1-247-756-81	CARBON 2.2K 5% 1/2W F	(SP, JE)
R504	1-249-441-11	CARBON 100K 5% 1/4W	
R505	1-249-425-11	CARBON 4.7K 5% 1/4W	
R506	1-249-429-11	CARBON 10K 5% 1/4W	
R507	1-249-393-11	CARBON 10 5% 1/4W	
⚠R508	1-249-401-11	CARBON 47 5% 1/4W F	(EXCEPT SP, JE)
R509	1-249-441-11	CARBON 100K 5% 1/4W	(EXCEPT SP, JE)
R510	1-249-441-11	CARBON 100K 5% 1/4W	(EXCEPT SP, JE)
R511	1-249-433-11	CARBON 22K 5% 1/4W	(EXCEPT SP, JE)
R512	1-249-426-11	CARBON 5.6K 5% 1/4W	(EXCEPT SP, JE)
⚠R513	1-249-405-11	CARBON 100 5% 1/4W F	(EXCEPT SP, JE)
R514	1-249-421-11	CARBON 2.2K 5% 1/4W	(EXCEPT SP, JE)
		< VOLTAGE SELECTOR >	
⚠VS1	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)	(SP, JE)
		< VIBRATOR >	
X501	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)	(EXCEPT SP, JE)
**********			
*	A-4371-645-A	TUNER BOARD, COMPLETE (AEP, UK)	
*	A-4371-648-A	TUNER BOARD, COMPLETE (G, IT)	
*	A-4377-194-A	TUNER BOARD, COMPLETE (SP, JE)	
		**********	
*	4-612-009-01	SPACER (A)	
*	4-924-988-11	PLATE (ST), GROUND	
		< CAPACITOR >	
C1	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C2	1-126-933-11	ELECT 100uF 20% 16V	
C3	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT SP, JE)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
C4	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C5	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C6	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C7	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT SP, JE)
C8	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT SP, JE)
C9	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT SP, JE)
C11	1-164-097-11	CERAMIC 0.022uF 50V	
C12	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(SP, JE)
C21	1-101-006-00	CERAMIC 0.047uF 50V	
C22	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C23	1-124-477-11	ELECT 47uF 20% 16V	
C24	1-126-962-11	ELECT 3.3uF 20% 50V	
C25	1-164-232-11	CERAMIC CHIP 0.01uF 10% 100V	
C26	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C27	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	(EXCEPT SP, JE)
C27	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(SP, JE)
C28	1-124-903-11	ELECT 1uF 20% 50V	
C29	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(EXCEPT SP, JE)
C30	1-124-903-11	ELECT 1uF 20% 50V	
C31	1-124-902-00	ELECT 0.47uF 20% 50V	
C32	1-124-463-00	ELECT 0.1uF 20% 50V	
C33	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C34	1-126-962-11	ELECT 3.3uF 20% 50V	
C35	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C36	1-126-962-11	ELECT 3.3uF 20% 50V	
C37	1-124-907-11	ELECT 10uF 20% 50V	
C38	1-124-907-11	ELECT 10uF 20% 50V	
C39	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C40	1-124-463-00	ELECT 0.1uF 20% 50V	
C41	1-124-907-11	ELECT 10uF 20% 50V	
C42	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C43	1-126-176-11	ELECT 220uF 20% 10V	
C44	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C46	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 50V	
C47	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(EXCEPT SP, JE)
C49	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 50V	
C50	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(EXCEPT SP, JE)
C51	1-124-477-11	ELECT 47uF 20% 16V	
C52	1-124-463-00	ELECT 0.1uF 20% 50V	
C53	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C54	1-164-097-11	CERAMIC 0.022uF 50V	
C61	1-163-809-00	CERAMIC CHIP 0.047uF 10% 25V	
C64	1-163-809-00	CERAMIC CHIP 0.047uF 10% 25V	
C66	1-163-809-00	CERAMIC CHIP 0.047uF 10% 25V	(AEP, UK)
C67	1-102-120-00	CERAMIC 0.0018uF 10% 50V	(AEP, UK)
C68	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(AEP, UK)

Ref. No.	Part No.	Description	Remark
		< JUMPER RESISTOR >	
C68	1-216-295-00	METAL GLAZE 0 5% 1/10W	(G, IT, SP, JE)
		< CAPACITOR >	
C70	1-163-809-00	CERAMIC CHIP 0.047uF 10% 25V	(AEP, UK)
C71	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	(AEP, UK)
C72	1-163-809-00	CERAMIC CHIP 0.047uF 10% 25V	(AEP, UK)
		< JUMPER RESISTOR >	
C72	1-216-295-00	METAL GLAZE 0 5% 1/10W	(G, IT, SP, JE)
		< CAPACITOR >	
C81	1-102-961-00	CERAMIC 27PF 5% 50V	
C82	1-102-961-00	CERAMIC 27PF 5% 50V	
C83	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C84	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C85	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C86	1-124-477-11	ELECT 47uF 20% 16V	
C87	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C88	1-164-096-11	CERAMIC 0.01uF 50V	
C101	1-124-925-11	ELECT 2.2uF 20% 50V	
C102	1-124-463-00	ELECT 0.1uF 20% 50V	
C103	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C104	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C105	1-124-477-11	ELECT 47uF 20% 16V	
C106	1-136-173-00	FILM 0.47uF 5% 50V	(AEP, UK)
C107	1-124-463-00	ELECT 0.1uF 20% 50V	(AEP, UK)
C108	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	(AEP, UK)
C109	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C152	1-126-962-11	ELECT 3.3uF 20% 50V	
C153	1-124-907-11	ELECT 10uF 20% 50V	
C154	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C155	1-124-120-11	ELECT 220uF 20% 25V	
C162	1-126-962-11	ELECT 3.3uF 20% 50V	
C163	1-124-907-11	ELECT 10uF 20% 50V	
C164	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
		< FILTER >	
CF1	1-527-836-11	FILTER, CERAMIC	
CF2	1-527-836-11	FILTER, CERAMIC	
CF3	1-527-836-11	FILTER, CERAMIC	(EXCEPT SP, JE)
CF21	1-577-075-11	OSCILLATOR, CERAMIC	
		< COMPOSITION CIRCUIT BLOCK >	
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	

TUNER

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CNJ1	1-568-937-11	PIN, CONNECTOR 10P	
* CNJ2	1-568-934-11	PIN, CONNECTOR 7P	
* CNJ3	1-506-503-61	PIN, CONNECTOR 9P	
* CNJ4	1-564-337-61	PIN, CONNECTOR 3P	
		< DIODE >	
D21	8-719-016-74	DIODE 1SS352	
D22	8-719-016-74	DIODE 1SS352	
D23	8-719-016-74	DIODE 1SS352	
D24	8-719-016-74	DIODE 1SS352	
D61	8-719-016-74	DIODE 1SS352	(AEP, UK)
		< FRONTEND >	
FE1	1-463-857-11	FRONT END, FM	(EXCEPT SP, JE)
FE1	1-463-862-21	FRONT END, FM	(SP, JE)
FE61	1-236-462-11	ENCAPSULATED COMPONENT	(AEP, UK)
FE61	1-236-461-11	ENCAPSULATED COMPONENT	(G, IT, SP, JE)
FE62	1-236-463-11	ENCAPSULATED COMPONENT	(AEP, UK)
		< IC >	
IC21	8-759-821-45	IC LA1851N	
IC81	8-759-175-87	IC LC7218-ST	
IC91	8-759-711-35	IC NJM4580D	
		< COIL >	
L1	1-410-482-31	INDUCTOR 100uH	
L2	1-410-482-31	INDUCTOR 100uH	(EXCEPT SP, JE)
L21	1-407-500-00	INDUCTOR 4.7mH	
L22	1-410-470-11	INDUCTOR 10uH	(EXCEPT SP, JE)
L61	1-408-425-00	INDUCTOR 220uH	(AEP, UK)
L151	1-410-464-11	INDUCTOR 3.3uH	(EXCEPT SP, JE)
L161	1-410-464-11	INDUCTOR 3.3uH	(EXCEPT SP, JE)
		< FILTER >	
LPF21	1-235-164-00	FILTER, LOW PASS	
LPF22	1-235-164-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q2	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q3	8-729-230-99	TRANSISTOR 2SC2669-OY	(EXCEPT SP, JE)
Q4	8-729-230-99	TRANSISTOR 2SC2669-OY	(EXCEPT SP, JE)
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q23	8-729-900-61	TRANSISTOR DTA114ES	
Q24	8-729-900-80	TRANSISTOR DTC114ES	
Q26	8-729-900-80	TRANSISTOR DTC114ES	
Q27	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q28	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q61	8-729-900-80	TRANSISTOR DTC114ES	(AEP, UK)
Q62	8-729-900-80	TRANSISTOR DTC114ES	(AEP, UK)
Q63	8-729-900-80	TRANSISTOR DTC114ES	(AEP, UK)
Q64	8-729-620-05	TRANSISTOR 2SC2603-EF	(AEP, UK)
Q65	8-729-119-76	TRANSISTOR 2SA1175-HFE	(AEP, UK)
Q66	8-729-900-80	TRANSISTOR DTC114ES	(AEP, UK)
Q81	8-729-900-61	TRANSISTOR DTA114ES	
Q82	8-729-900-80	TRANSISTOR DTC114ES	
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB	
Q85	8-729-202-67	TRANSISTOR 2SK246-GR3	(AEP, UK)
Q86	8-729-230-93	TRANSISTOR 2SC3113-AB	(AEP, UK)
		< RESISTOR >	
⚠R1	1-249-397-11	CARBON 22 5% 1/4W F	(EXCEPT SP, JE)
⚠R1	1-249-401-11	CARBON 47 5% 1/4W F	(SP, JE)
R3	1-216-047-00	METAL CHIP 820 5% 1/10W	
R4	1-216-025-00	METAL CHIP 100 5% 1/10W	
R5	1-216-037-00	METAL CHIP 330 5% 1/10W	
R6	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R7	1-216-037-00	METAL CHIP 330 5% 1/10W	
R8	1-216-035-00	METAL CHIP 270 5% 1/10W	
R9	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R10	1-216-037-00	METAL CHIP 330 5% 1/10W	(EXCEPT SP, JE)
R11	1-216-079-00	METAL CHIP 18K 5% 1/10W	(EXCEPT SP, JE)
R12	1-216-037-00	METAL CHIP 330 5% 1/10W	(EXCEPT SP, JE)
R13	1-216-047-00	METAL CHIP 820 5% 1/10W	(EXCEPT SP, JE)
R14	1-216-083-00	METAL CHIP 27K 5% 1/10W	(EXCEPT SP, JE)
R15	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT SP, JE)
R16	1-216-089-00	METAL GLAZE 47K 5% 1/10W	(EXCEPT SP, JE)
⚠R21	1-249-404-00	CARBON 82 5% 1/4W F	
R22	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R25	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R27	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R28	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R29	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R31	1-216-041-00	METAL CHIP 470 5% 1/10W	
R32	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R33	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R36	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R37	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R38	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R39	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R40	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
R42	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R43	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R44	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R45	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
⚠R47	1-249-409-11	CARBON	220	5%	1/4W	F
R48	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R49	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R61	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R62	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R63	1-216-009-00	METAL CHIP	22	5%	1/10W	(G, IT, SP, JE)
R64	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK)
R65	1-216-089-00	METAL GLAZE	47K	5%	1/10W	(AEP, UK)
R66	1-216-121-00	METAL CHIP	1M	5%	1/10W	(AEP, UK)
R67	1-216-097-00	METAL CHIP	100K	5%	1/10W	(AEP, UK)
R68	1-216-083-00	METAL CHIP	27K	5%	1/10W	(AEP, UK)
R69	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK)
R70	1-216-041-00	METAL CHIP	470	5%	1/10W	(AEP, UK)
R71	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(AEP, UK)
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK)
R73	1-216-073-00	METAL CHIP	10K	5%	1/10W	(AEP, UK)
R74	1-216-073-00	METAL CHIP	10K	5%	1/10W	(AEP, UK)
R75	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(AEP, UK)
R81	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R82	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R83	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R84	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R85	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R86	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R87	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R88	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R89	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R90	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R91	1-216-049-00	METAL CHIP	1K	5%	1/10W	
⚠R92	1-249-401-11	CARBON	47	5%	1/4W	F
R101	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R102	1-216-043-00	METAL CHIP	560	5%	1/10W	
R103	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R104	1-216-035-00	METAL CHIP	270	5%	1/10W	
R105	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R106	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R107	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R108	1-216-025-00	METAL CHIP	100	5%	1/10W	
R109	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
⚠R110	1-249-405-11	CARBON	100	5%	1/4W	F
R111	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(AEP, UK)
R112	1-216-043-00	METAL CHIP	560	5%	1/10W	(AEP, UK)
R113	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP, UK)
R114	1-216-035-00	METAL CHIP	270	5%	1/10W	(AEP, UK)

Ref. No.	Part No.	Description				Remark
R115	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK)
R116	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(AEP, UK)
R117	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(AEP, UK)
R118	1-216-025-00	METAL CHIP	100	5%	1/10W	(AEP, UK)
R151	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R152	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R153	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R154	1-216-041-00	METAL CHIP	470	5%	1/10W	
⚠R155	1-249-401-11	CARBON	47	5%	1/4W	F
R156	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R161	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R162	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R163	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R164	1-216-041-00	METAL CHIP	470	5%	1/10W	
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R555	1-216-109-00	METAL CHIP	330K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV21	1-241-763-11	RES, ADJ, CARBON 4.7K				
RV22	1-241-765-11	RES, ADJ, CARBON 22K				
RV24	1-238-019-11	RES, ADJ, CARBON 47K				(EXCEPT SP, JE)
RV24	1-241-767-21	RES, ADJ, CARBON 100K				(SP, JE)
		< TRANSFORMER >				
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR				
T23	1-235-126-00	ENCAPSULATED COMPONENT				(EXCEPT SP, JE)
		< TERMINAL >				
* TM1	1-537-138-31	TERMINAL BOARD (ANT)				(EXCEPT SP, JE)
* TM1	1-537-225-11	TERMINAL BOARD (ANT(F)TYPE)				(SP, JE)
		< TEST PIN >				
* TP1	1-565-513-11	PIN, CONNECTOR 2P				
		< VIBRATOR >				
XT81	1-577-126-21	VIBRATOR, CRYSTAL (7.2MHz)				

****

MISCELLANEOUS

****

14	1-751-023-11	WIRE (FLAT TYPE) (5 CORE)	
⚠20	1-575-651-21	CORD, POWER	(EXCEPT UK)
⚠20	1-769-639-11	CORD, POWER	(UK)
CNC1	1-769-096-11	CORD (WITH CONNECTOR)	
⚠CNJ501	1-526-794-11	OUTLET, AC	
⚠PT501	1-423-525-11	TRANSFORMER, POWER	(AEP, G, IT, UK)
⚠PT501	1-423-526-11	TRANSFORMER, POWER	(SP, JE)

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		******************************	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM)	
	1-558-271-11	CORD, CONNECTION	
	3-759-588-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
	3-759-588-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, G, IT)	
	3-759-588-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (SP, JE)	
	3-759-588-61	MANUAL, INSTRUCTION (ENGLISH) (UK)	
*	4-968-991-01	CUSHION (AEP, G, IT)	
*	4-968-992-91	INDIVIDUAL CARTON (AEP, G, IT)	
*	4-970-587-01	PLATE (PIN JACK 2P), INDICATION	
	X-4945-464-1	SCREW ASSY (4)	

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

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ST-S1

SONY
SERVICE MANUAL

AEP Model

SUPPLEMENT-1

File this supplement with the service manual.

- **Addition of BLOCK DIAGRAM.**
- **Correction of SPECIFICATIONS, ELECTRICAL ADJUSTMENTS and Semiconductor Lead Layouts.**

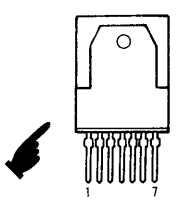
☛ : corrected portion

SPECIFICATIONS

Dimensions (including projections)
Approx. 310×90×350mm (12 1/4×3 5/8×13 7/8 inches) (w/h/d) ☛

Semiconductor Lead Layouts

LA5667



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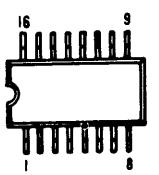

(TOP VIEW)

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Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

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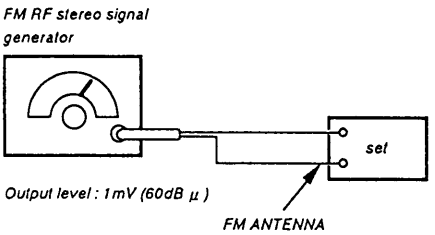
ELECTRICAL ADJUSTMENTS

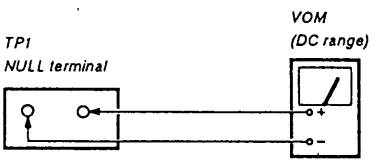
FM SECTION

SSG	Carrier frequency	98MHz
	Modulation	MONO: 1kHz, 75kHz deviation
		STEREO : Audio 1kHz, 16.25kHz deviation Pilot 19kHz, 7.5kHz deviation Sub-carrier 38kHz, 16.25kHz deviation

• FM Discriminator Alignment (NULL check)

Setting :





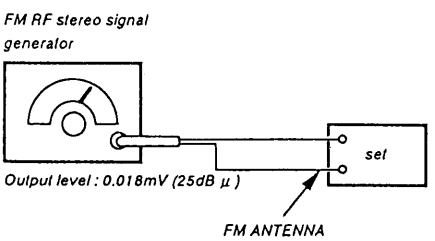
Procedur :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM

Note : FM tuned level adjustment should be made after FM discriminatior alignment.

• FM Tuned Level Adjustment

Setting :

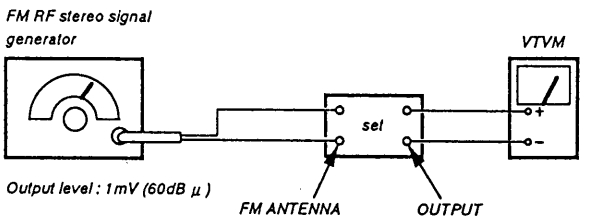


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the TUNED LED goes on.

• FM Stereo Separation Adjustment

Setting :



Procedure :

Tune the set to 98MHz

FM stereo Signal generator Output	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading

L-CH Stereo separation : Ⓐ - Ⓑ

R-CH Stereo separation : Ⓒ - Ⓓ

The separations of both channels should be equal.

AM SECTION

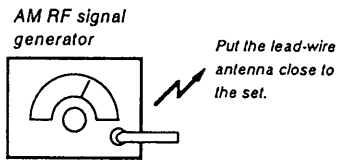
● **AM Tuned Level Adjustment**

( ): Italian, German model

Setting :

BAND selector : LW (AM)

Procedure :



30%amplitude modulation by 400Hz signal

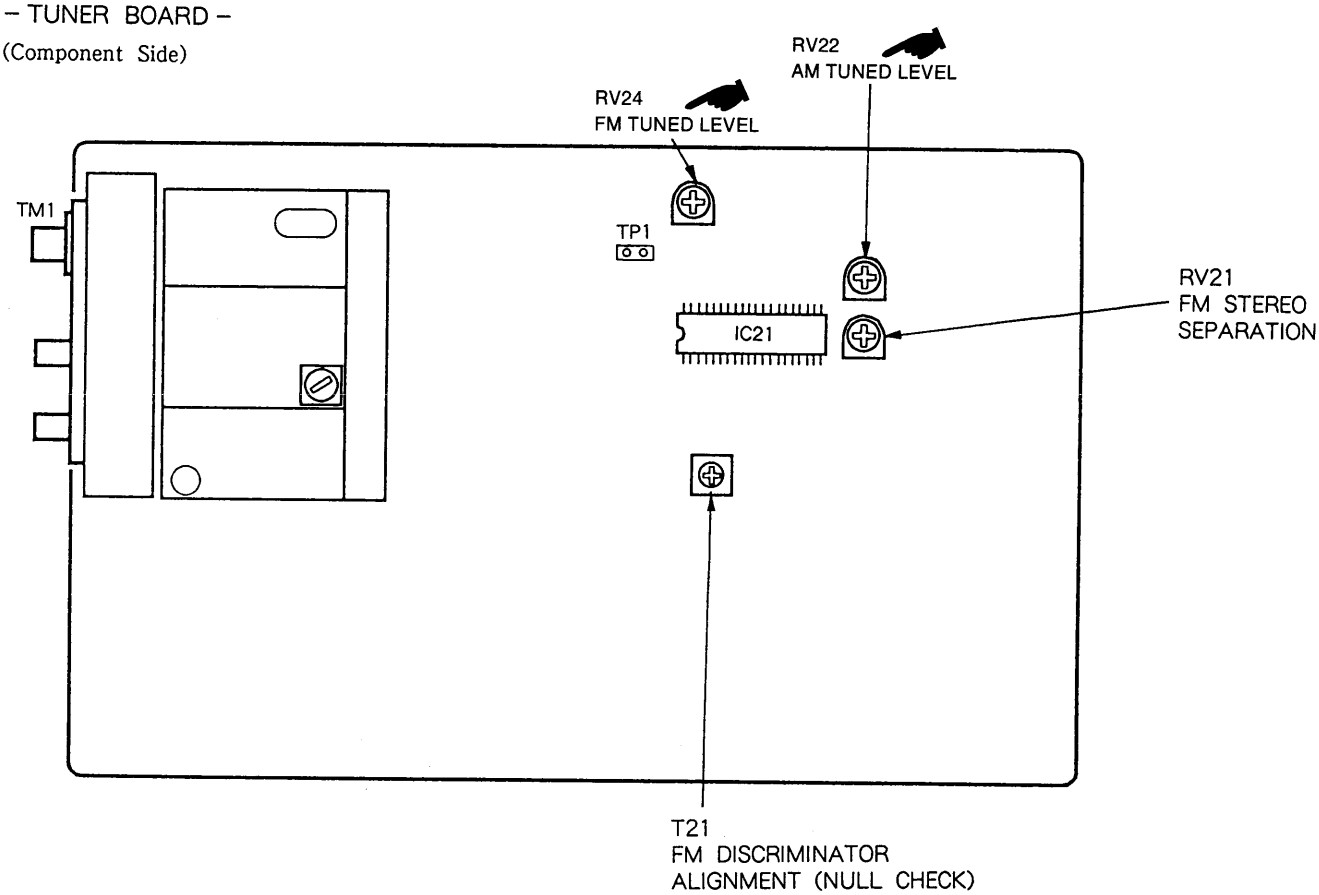
Output level: 94dBμ (50mV)

1. Tune the set to 216kHz (999kHz).
2. Adjust the RV22 so that the TUNED LED gones on.

Adjustment Location

– TUNER BOARD –

(Component Side)



BLOCK DIAGRAM